

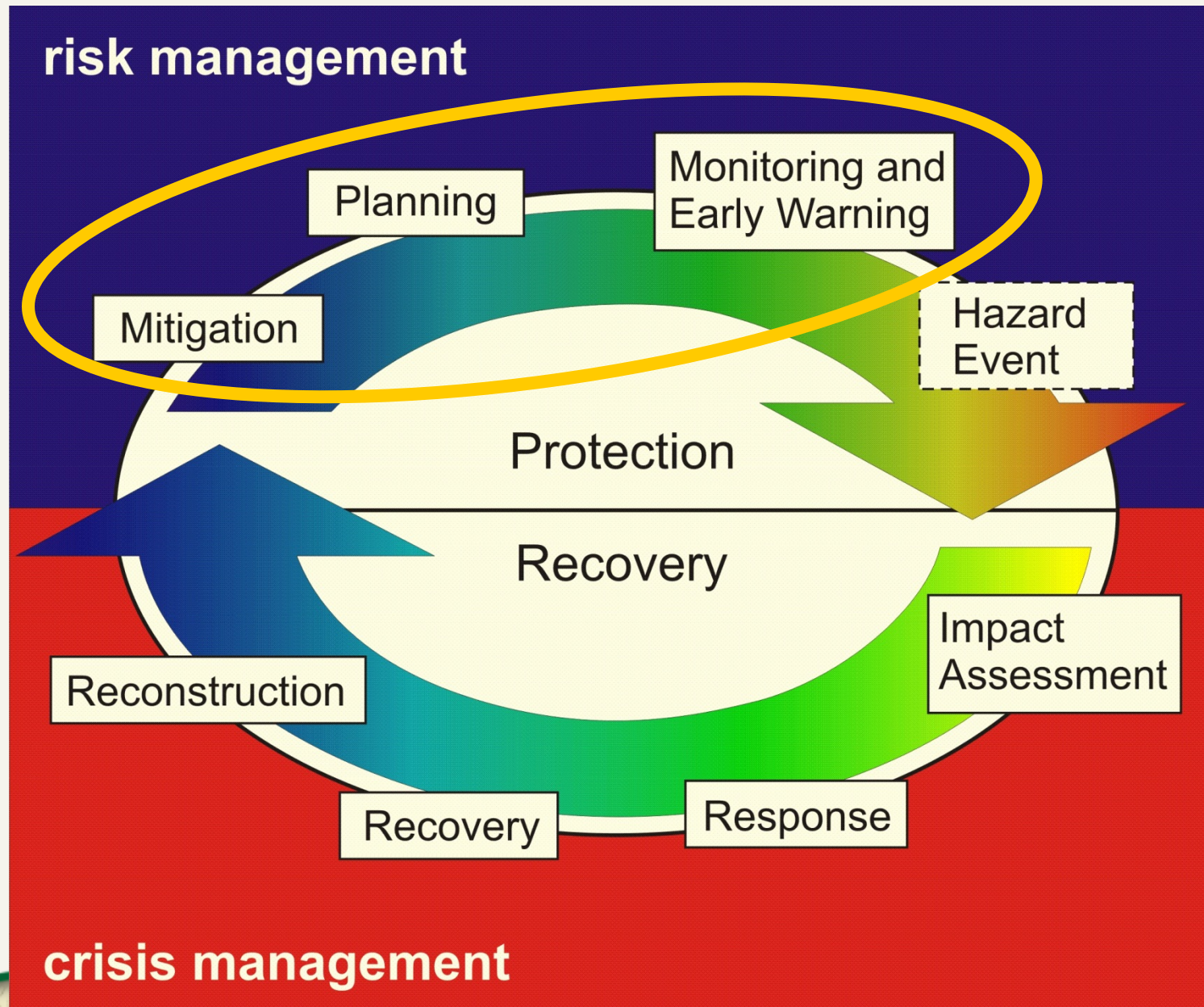


National Drought Mitigation Center: Delivering Drought Information Services

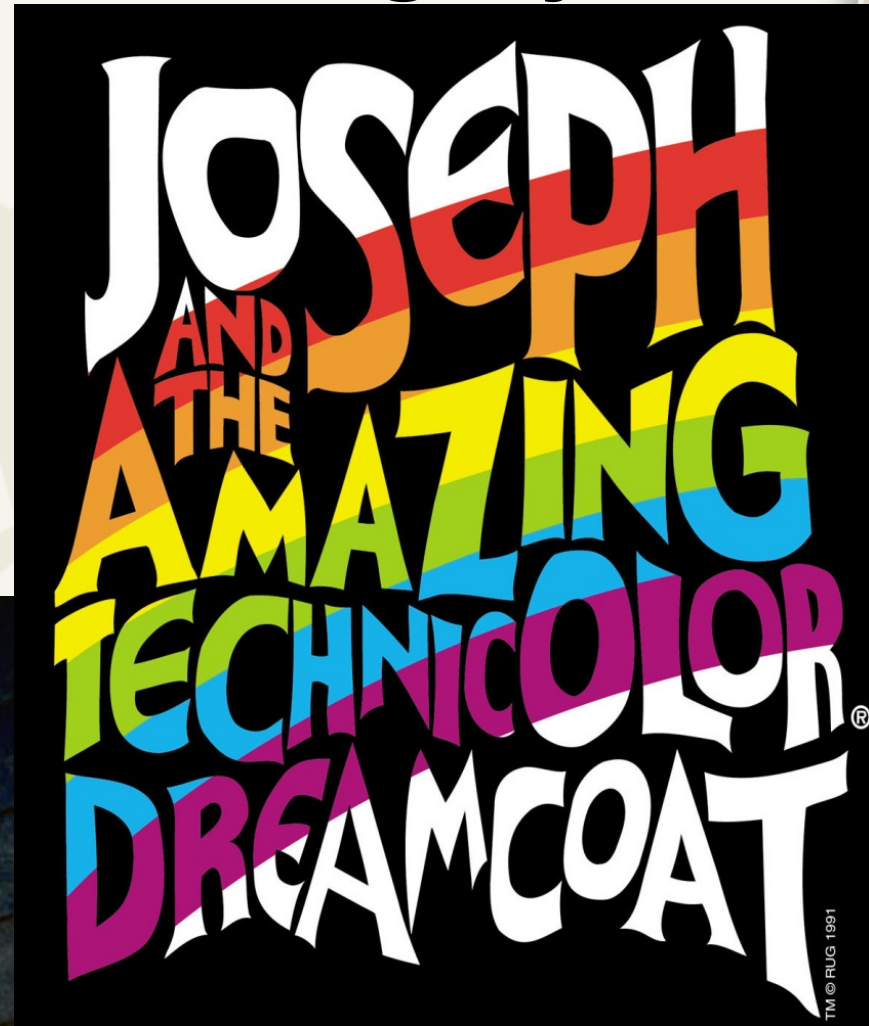
Michael Hayes, Director and Professor
National Drought Mitigation Center
School of Natural Resources
University of Nebraska-Lincoln

Photo: Nicole Wall, NDMC, Platte River, August 2012

The Cycle of Disaster Management



Disaster Management Legacy



Disaster Management Legacy



“Floods are 'acts of God', but flood losses are largely acts of man.”



Gilbert Fowler White

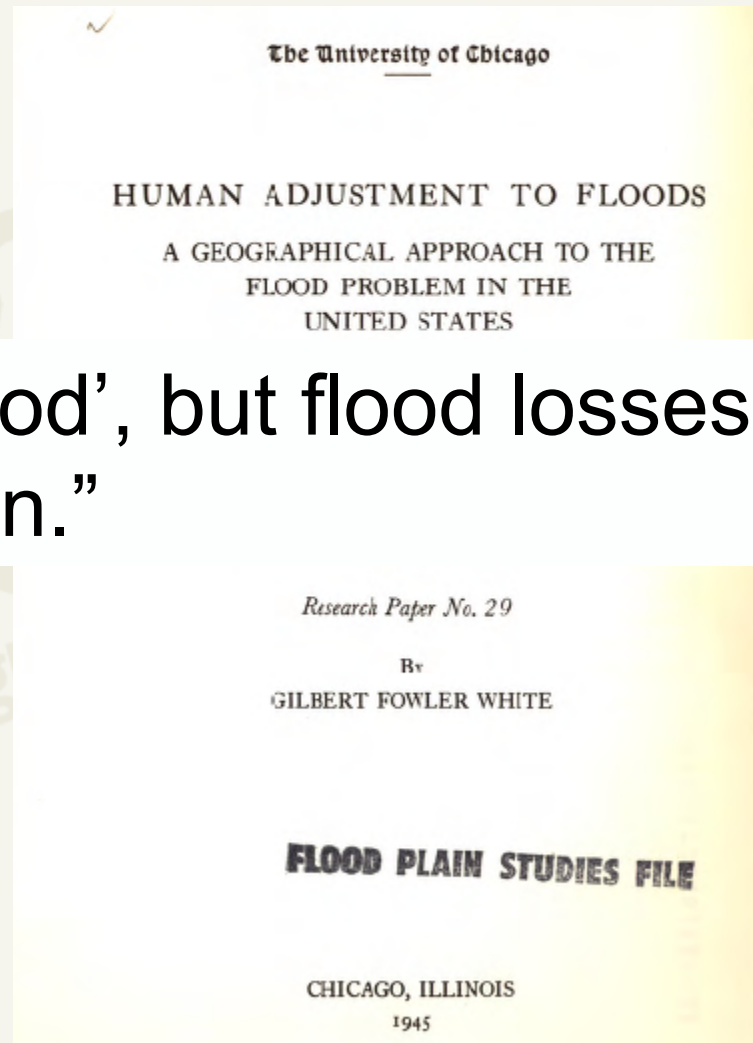




Photo: Chris Austin, Lake Shasta, CA, 1976

Drought Management Legacy: Don Wilhite

“Governments should prepare for droughts by developing and implementing strategies and plans that reduce associated impacts.”

-Wilhite and Glantz, 1985



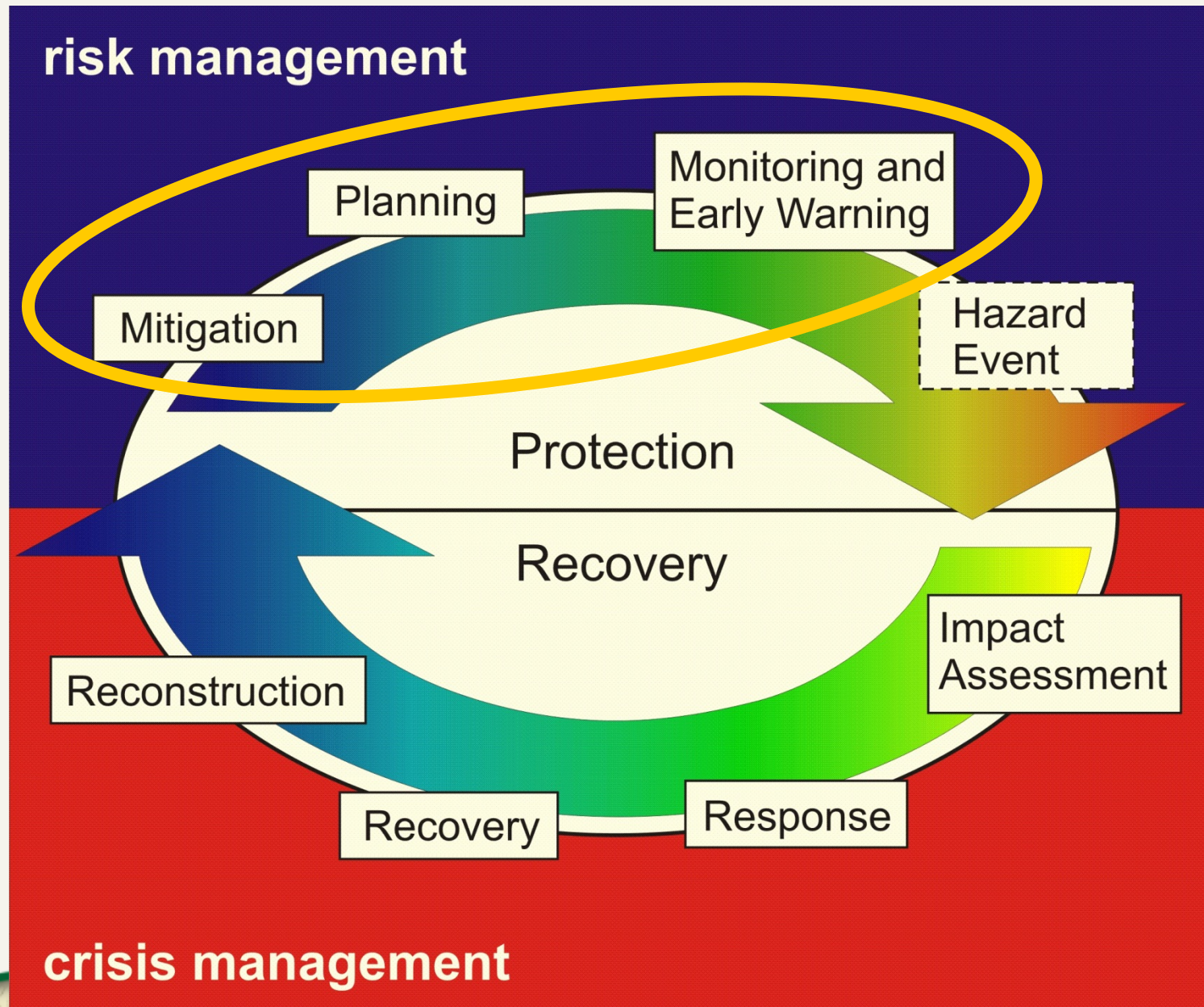
National Drought Mitigation Center



Mission: To lessen societal vulnerability to drought by promoting planning and the adoption of appropriate risk management techniques.



The Cycle of Disaster Management

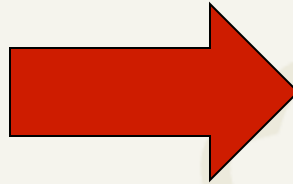
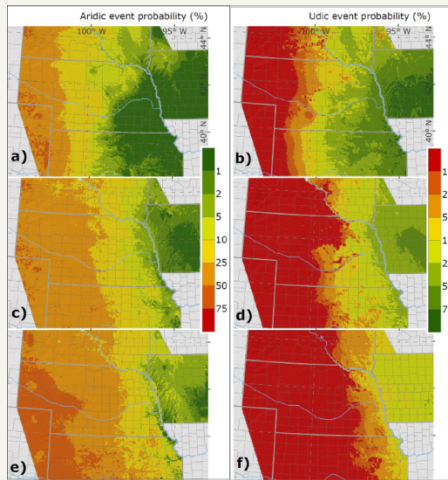


National Drought Mitigation Center

- 1995, Founder: Don Wilhite
- Staff: 16 people, tremendous diversity
- “Boundary organization” that bridges the gap between science and stakeholders
- The NDMC is a critical national/international resource
 - “Go-to” resource of drought-related information
 - Provides leadership at the state and national level on drought preparedness

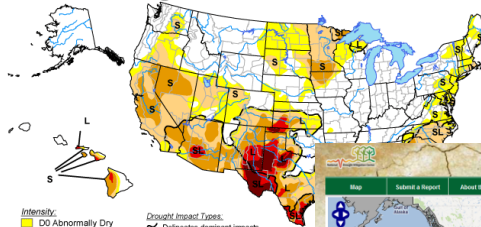


National Drought Mitigation Center



U.S. Drought Monitor

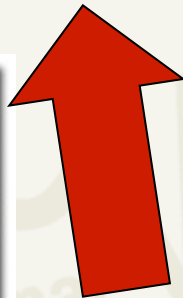
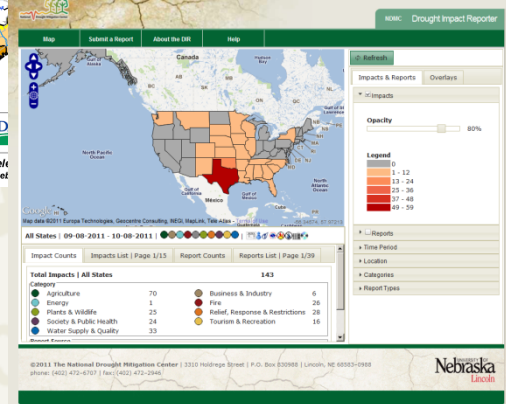
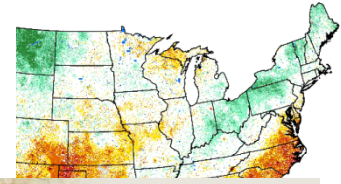
March 20, 2012
Valid 7 a.m. EDT



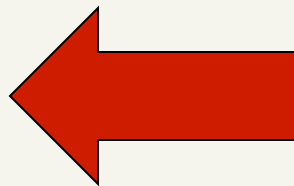
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.
<http://droughtmonitor.unl.edu/>
Author: Eric Luet

Vegetation Drought Response Index Complete

June 13, 2011

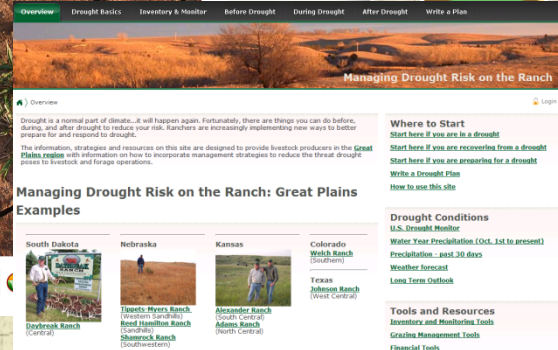
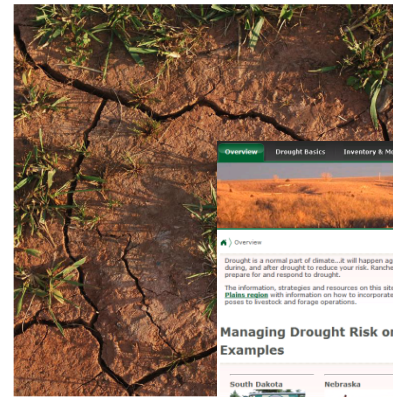


Drought Mitigation Center

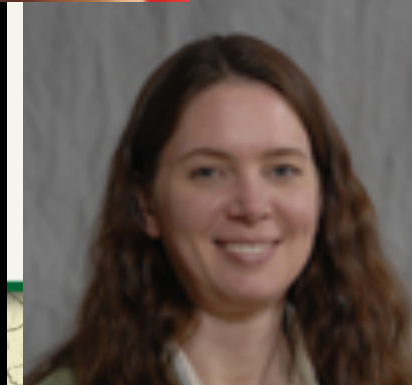
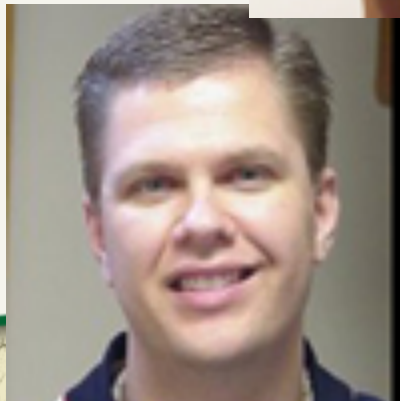
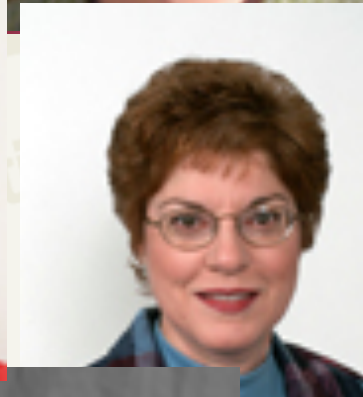


Drought-Ready Communities

A Guide to Community Drought Preparedness



NDMC Team



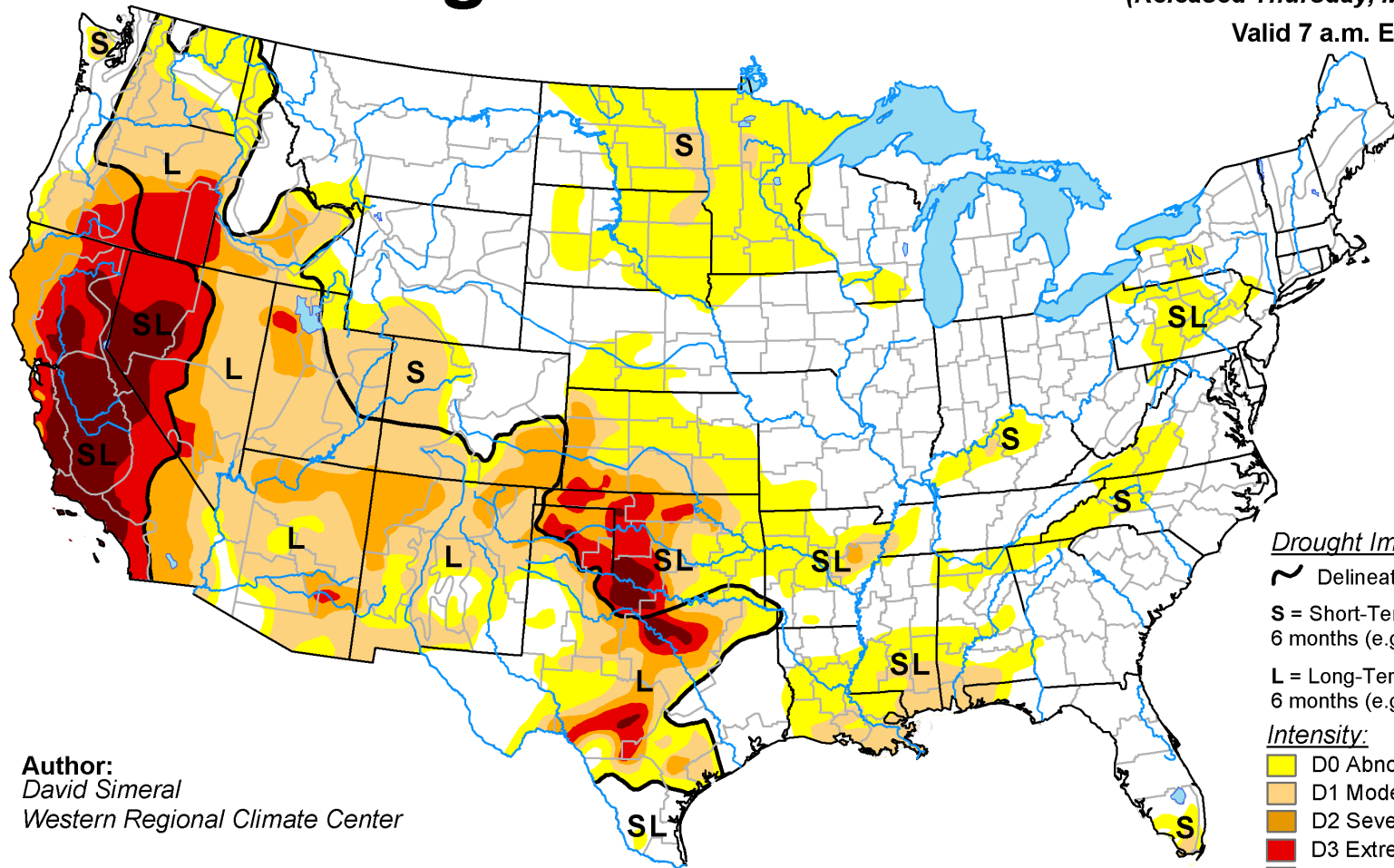
Deb
Wood

U.S. Drought Monitor

March 3, 2015

(Released Thursday, Mar. 5, 2015)

Valid 7 a.m. EST



Author:
David Simeral
Western Regional Climate Center

Drought Impact Types:

~ Delineates dominant impacts

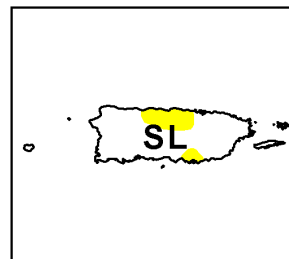
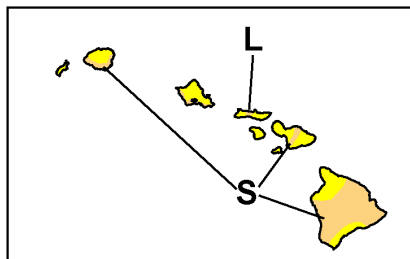
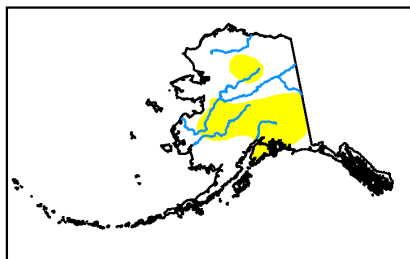
S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)

L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

Intensity:

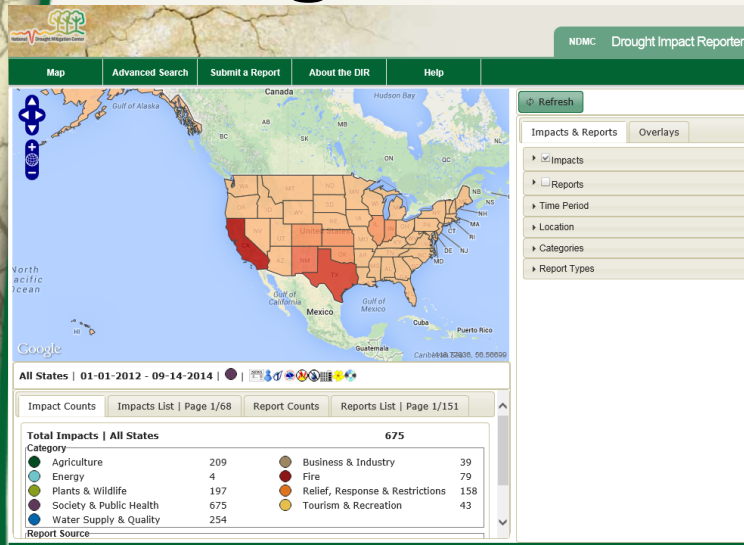
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



<http://droughtmonitor.unl.edu/>

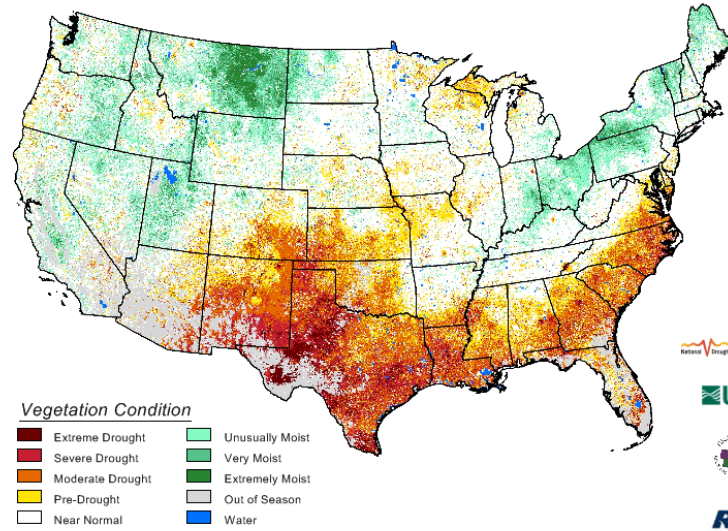
Drought Monitoring and Early Warning



- 675 “impacts” since 2012
- Water quality
- Mental health
- Respiratory illness
- Excessive heat
- Wildfires/smoke
- Wildlife intrusions

Vegetation Drought Response Index Complete

June 13, 2011



Friday, February 01, 2013

National Drought Mitigation Center

Drought Risk Atlas

Home Climate Data Methodology About Help

Welcome to the Drought Risk Atlas

Introduction

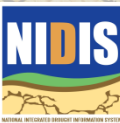
The idea of updating and expanding a national drought atlas was developed from the original Drought Atlas that was done in conjunction with United States Army Corps of Engineers by Hoskins, Wallis and Guttman in the early 1990s. The original Drought Atlas consisted of those stations in the Historical Climate Network (HCN), numbering approximately 1,000 stations. The period of record at the time was limited, as many stations only had records from the 1940s to present, and these data points were put into their respective climate divisions. A monthly time step was used to calculate the Palmer Drought Severity Index (PDSI). With the new Drought Atlas, bringing precise data down to spatial scales that would allow decision makers to use this tool to better understand drought in their respective region and to make a better decision.

For the new National Drought Atlas, the idea was to expand the data both in the number of stations analyzed and the period of record to include the most complete long-term stations, some of which are not part of the HCN. Using a weekly time-step to calculate multiple drought indices at each station location, not on a climate division scale, allows for a more precise representation of drought histories. The Standardized Precipitation Index (SPI), Palmer Drought Severity Index (PDSI), Deciles, the United States Drought Monitor and other Climatological data are included in the new drought atlas. Along with the Climatological data, gridded maps created on a weekly time-step are available for the entire United States.

The National Drought Mitigation Center | 3310 Holdrege Street | P.O. Box 830988 | Lincoln, NE 68583-0988
Phone: (402) 472-6707 | Fax: (402) 472-2946 | Contact Us

Nebraska Lincoln

Home | Climate | Data | Methodology | About | Help
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UNIVERSITY OF
Nebraska
Lincoln



Drought Monitoring and Early Warning

North American Drought Monitor

July 31, 2014

Released: Wednesday, August 13, 2014

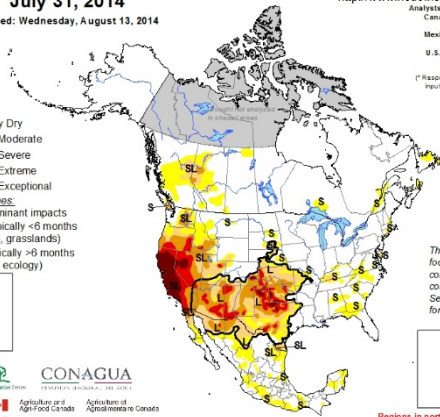
<http://www.ndbc.noaa.gov/nadm.html>

Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

Drought Impact Types:

- ~ Delineates dominant impacts
- S = Short-Term, typically <6 months (e.g. agriculture, grasslands)
- L = Long-Term, typically >6 months (e.g. hydrology, ecology)



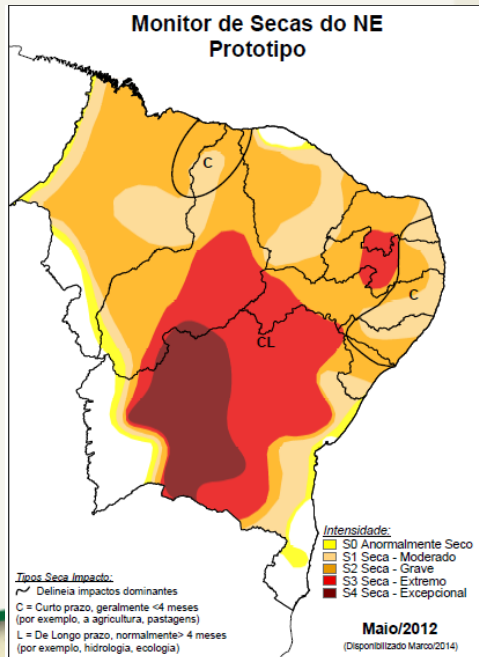
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text for a general summary.

Regions in northern Canada may not be as accurate as other regions due to limited information.



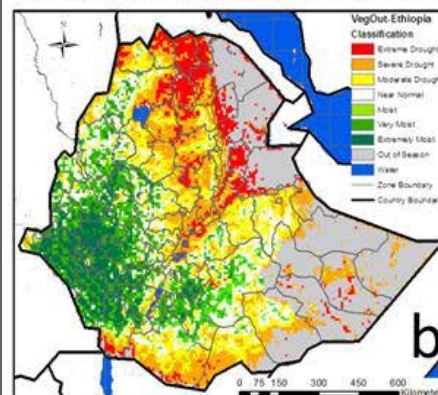
North American Drought Monitor

Brazil

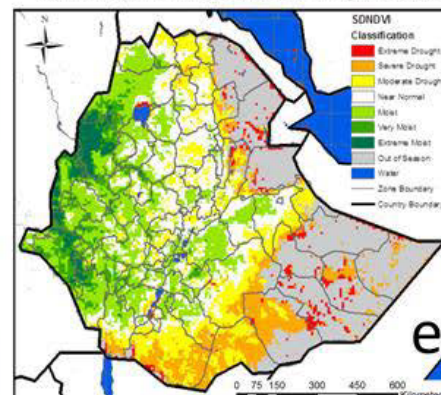


Greater Horn of Africa

Two-month SDNDVI Prediction for August 2011



Observed AVHRR SDNDVI for August 2011



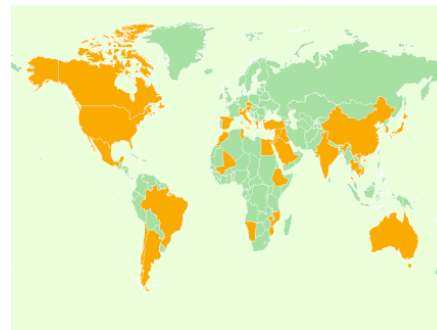
INTERSUCHO Drought monitoring in CZ What is drought Research drought



Czech Republic

Planning Tools

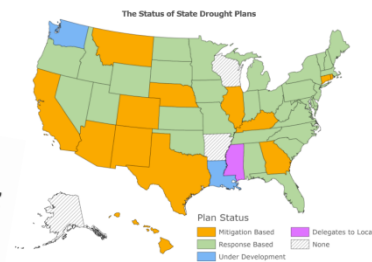
- ▶ Planning at ***all scales***
- ▶ Planning should start local and involve the ***“locals”***
- ▶ Planning is a ***“living”*** process



Nation



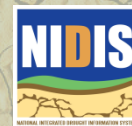
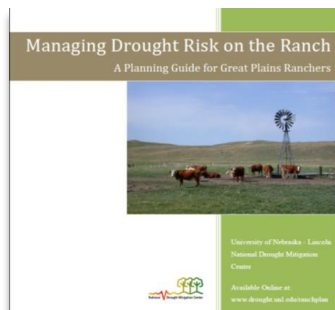
Basin



Tribal/
State

Community

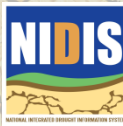
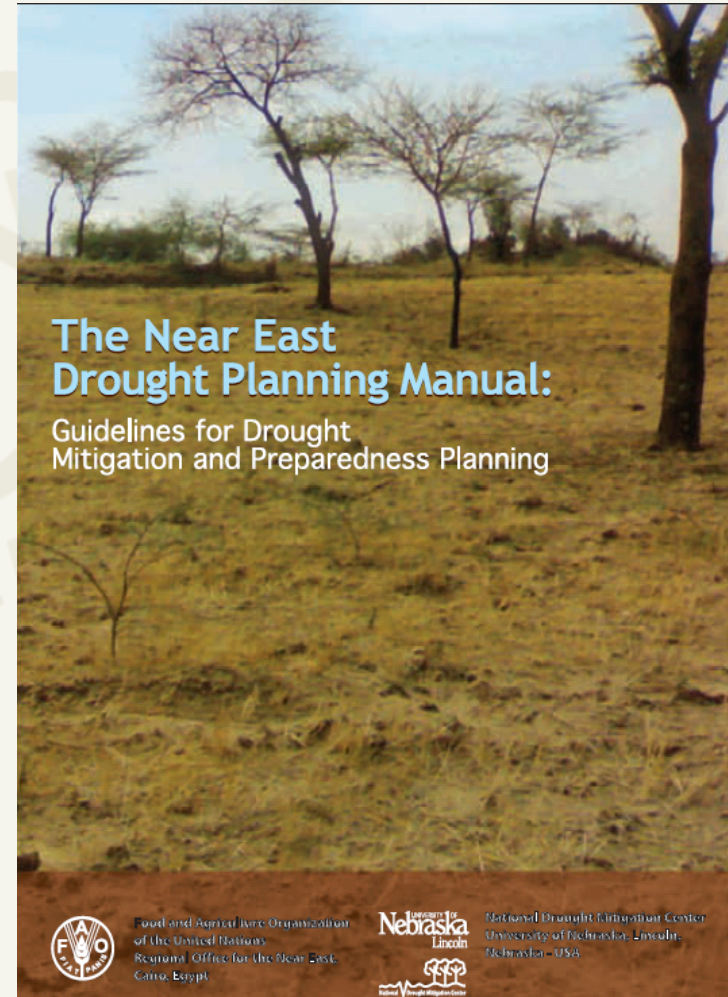
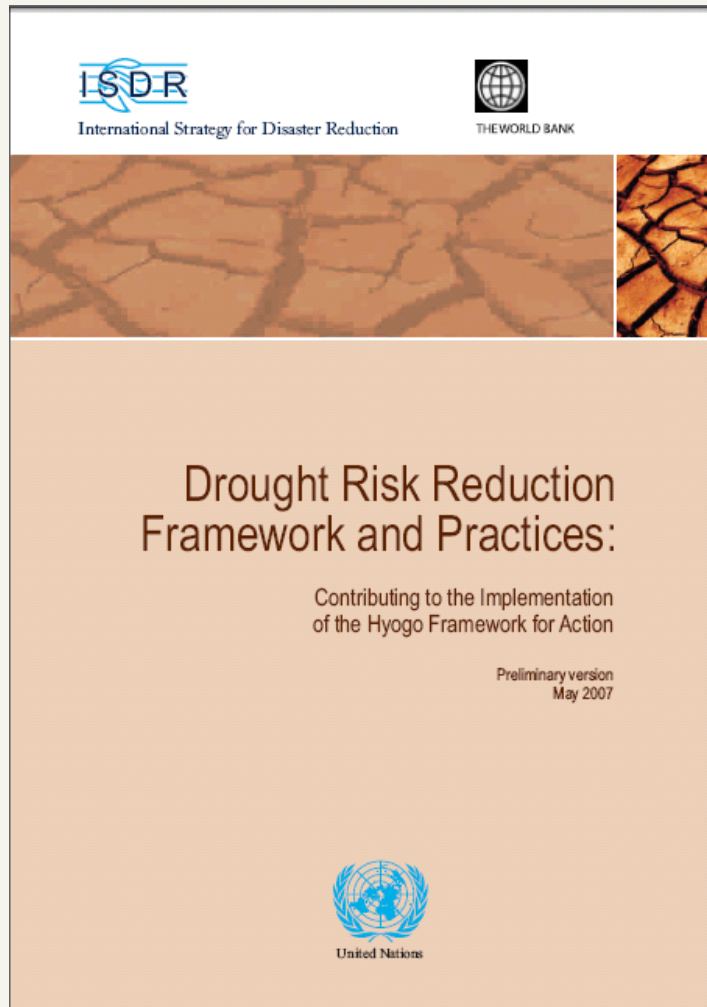
Individual



UNIVERSITY OF
Nebraska
Lincoln



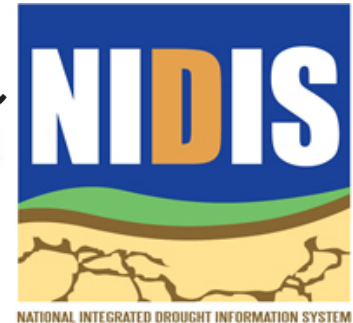
International Drought Planning Guides



Public Participation, Education, & Engagement in Drought Risk Management



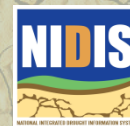
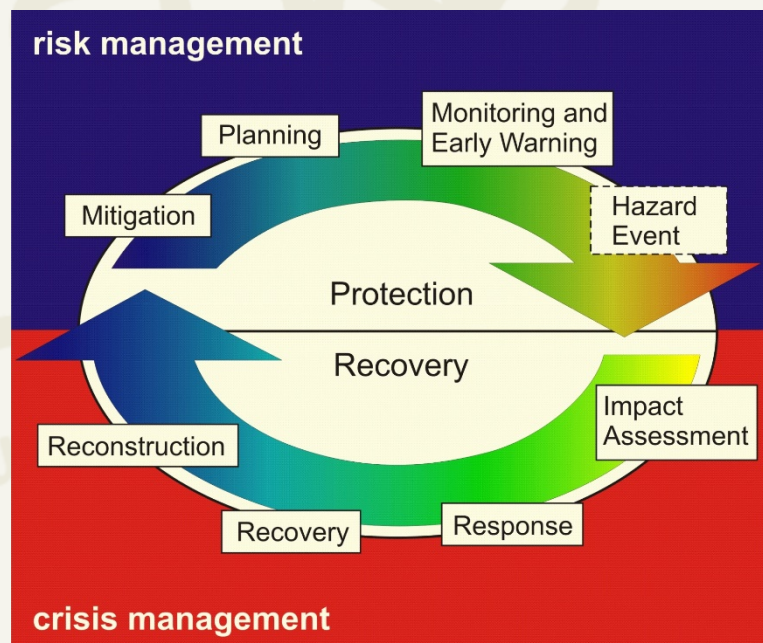
Deborah J. Bathke
Nicole A. Wall
Kelly Helm Smith
Tonya R. Haigh
Tonya Bernadt



Strategy: Promote Drought Risk Management

- Stakeholder-driven research, products, & activities

The Cycle of Disaster Management



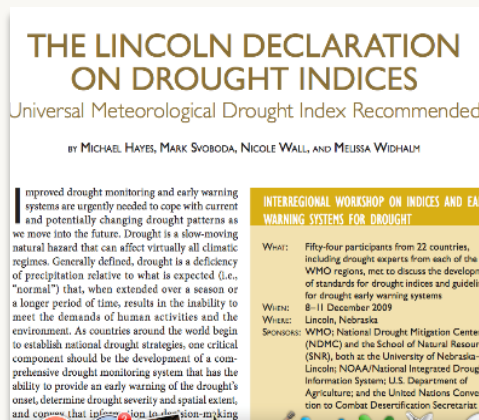
Tools

▣ Theories

- Public Participation
- Social Science
- Adult Education
- Community of Practice



Examples



Decision Focused Meetings



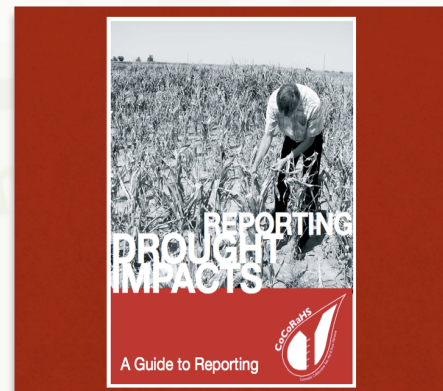
Network Building



Practice Drought Exercises



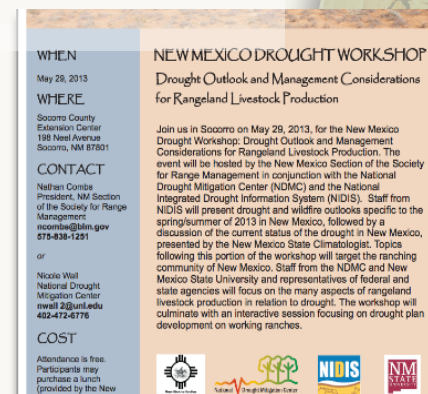
Informal Learning



Citizen Science



Collaborative Research



Planning Workshops

NDMC/Montana Collaboration Timeline

- 1995, Montana Drought Plan developed
- 1997, Western Drought Coordination Council
 - Ron Speakthunder, Fort Belknap Community Council
- 1998-2000, National Drought Policy Commission
 - Brian Schweitzer
- 2002 Drought
- 2003 “Golden Triangle” Tour
 - Representative Denny Rehburg
- 2004-2006, Great Divide Workshops
- 2007, NIDIS
- 2011, Decadal Climate Variability Studies

